

Calculus II (MATH 102 A, B)

Sabancı University, Fall 2024/25

This syllabus will receive small updates, especially during the first 2 weeks, including midterm dates and office hours

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Section B Lecturer: Ayesha Asloob Qureshi (Topaçoğlu)

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Office Hours: by appointment

IMPORTANT: when you mail any of us include **“MATH 102” in the subject**

Class Hours: Section A: Mon 11:40 -12:30 in *SBS G071*, Tue 09:40 - 11:30 in *FENS G077*

Section B: Mon 16:40 - 17:30 in *SBS G071*, Tue 14:40 - 16:30 in *SBS G071*

Recitation Hours: Fri 8:40 - 10:30 (A1 - A6),
Fri 10:40 - 12:30 (B1 - B6),
Fri 12:40 - 14:30 (C1 - C3),
Fri 14:40 - 16:30 (D1 - D2).

You are responsible for every announcement made in class or on SUCourse. Not attending the class or not following SUCourse regularly is not an excuse, in case you miss something.

Textbook: Calculus Early Transcendentals 2nd Edition (Global Edition), Briggs, Cochran & Gillett. You can purchase it following the instructions found on the course page, in SUCourse.

You will find a tentative breakdown of material at the end of the syllabus.

Learning Outcomes: On completion of this course the student should be able to:

1. Define the notion of convergence of series and use various tests to determine series convergence
2. Find Taylor representations of functions and approximate functions via Taylor polynomials
3. Understand and use the concept of a function of several variables, draw graphs in 3 dimensional spaces
4. Use the properties of vectors and operations with vectors
5. Compute partial derivatives, directional derivatives and write equations of tangent planes to surfaces
6. Apply partial derivatives to find and test local extrema
7. Evaluate double integrals in Cartesian and polar coordinates and triple integrals in Cartesian coordinates

Lectures and Recitations: Lectures are given in class as detailed above. Recitations are given in class as detailed in your course schedule. Attendance is checked on both occasions.

Each recitation will consist of the following activities.

Problem solving: Assistants will discuss solutions of various exercises.

Group-study: Students are given a worksheet to work on, in groups, with the support of the Assistants.

Quiz: On some weeks, there will be a quiz at the end of the recitation.

Grading: The course grade depends exclusively on the following listed items. The details of each item are discussed after the table. There will be no other extra-credit opportunities.

Midterm 1	22%
Midterm 2	22%
Final	35%
Lecture Attendance	5%
Recitation Attendance	5%
Recitation Quizzes	16%

Exams: The midterms will be on the date and time listed below. Detailed information will be available on SUCourse. The university will later announce the final exam date on MySU, which may be on any day between 02/01/2025 and 12/01/2025. Student Resources schedules the final exam, so do not plan to leave İstanbul before 16/01/2025 (especially if you need to take the *Makeup*, check below).

During the exams, students are **only allowed to have pencils, pens, erasers, water, and napkins**. All other belongings will be left in a corner of the exam room. All electronic devices must be switched off. Any student violating these rules will receive 0 points for that exam.

Midterm 1	02.11.2024, 12:45-14:15
Midterm 2	30.11.2024, 11:30-13:00
Final	Scheduled and announced by SR on MySU

Lecture Attendance: There will be 7 to 8 attendance checks, in the form of pop-up quizzes. Each quiz is valid only if the student is in the room while the pop-up quiz is asked and if it shows some relevant effort to solve it.

There will be no makeup for any of these pop-up quizzes and the Lecture Attendance grade is determined by the highest 5 scores. Students found having a behaviour in contrast with Academic Integrity, will receive 0 from the Lecture Attendance grade component.

Recitation Attendance: Attendance will be taken by signature, in both hours. Students must actively attend both full hours and give in a valid quiz paper, if there is a quiz, in order to be counted as present. Latecomers will not be allowed to sign the attendance sheet and a signature for the second hour is necessary for the quiz to be counted.

There will be no makeup for any missed recitation attendance. Each attended recitation is worth 1 point. The highest 8 grades will determine the recitation participation grade. Students found having a behaviour in contrast with Academic Integrity, will receive 0 from the Recitation Attendance grade component.

Each student is responsible for keeping track of their attendance records on SUCourse. If any is entered incorrectly, they must notify Çiğdem Çelik, within 2 weeks from when the record is published. Students having medical reports for an extended period of time (about a month or so) must contact Çiğdem Çelik, without any delay.

Recitation Quizzes: There will be 6 short quizzes in total. Students will be informed during the lectures in the weeks when a recitation quiz will be given. Note that attendance in the second hour of recitation is required for a quiz to be counted. More details are announced on SUCourse. There will be no makeup for missed quizzes. At the end of the semester, the highest 4 grades will determine the recitation quiz grade.

During the quizzes, students are **NOT** allowed to have any books, notes, electronic devices (including cell phones, smart watches, calculators, earphones, computers, etc.), or any other kind of supporting learning material. A student violating these or any of the Academic Integrity rules will receive 0 points for that quiz.

Exams Make-up Policy: Students missing an exam and wishing to make it up, must contact Gamze Kuruk by mail, and provide a reason as soon as possible. For any health problem, a medical report must be given or checked by SU Health Center within 3 days of the date of the report. Note: students taking an exam and also submitting a health report, from any source different from the Sabancı Health Center, will not be allowed to take the makeup, unless an instructor is notified before the end of that exam.

The makeup will be at the end of the semester (after the finals period and before 16/01/2025). The makeup exam will contain all topics. The makeup will replace up to two exam grades. Only students that had contacted Gamze Kuruk with a valid excuse before the last days of the finals will be informed about the time and place. We do not take responsibility if we are contacted too late. There is no makeup for the makeup.

IMPORTANT: Every page of any paper submitted in lectures, quizzes, and exams is valid **ONLY IF** hand-written and bearing name, surname, student ID number, and signature of the student. Non-valid pages will be entirely ignored. Any quiz or attendance taken in the wrong section is invalid and discarded.

NA Policy: Students missing 2 exams or more will receive NA if they also miss the make-up.

In general, if there will be serious issues preventing you from regularly following the course, you are required to contact the Çiğdem Çelik. Please see also *Class Discipline* below.

Academic Integrity: All university policies on academic integrity apply to our course, and they will be enforced (more information on <http://www.sabanciuniv.edu/en/academic-integrity-statement>).

In general, to ensure Academic Integrity, any student might be asked to validate any activity contributing to their grade in an interview (recorded, with audio and video). A student failing to explain the submitted work, or refusing/missing the interview, will receive zero from that work.

In particular, no form of cheating is welcome in the exams, quizzes or any assignment, such as copying whole or part of each other's answers, using cheat-sheets etc. The action against such violations could range from getting a zero on the particular assignment to explaining the case in front of the Disciplinary Committee.

Class Discipline: It is our responsibility to provide students with excellent teaching and learning environments. We are therefore asking you to respect both our responsibility to teach and the right of other students to learn. Any action that disturbs your classmates or disrupts the online activities is unacceptable. Repeated violations of the above rules may cause a student to be counted as absent for a lecture or a recitation.

General Suggestions:

- Always come to lectures and recitations with a notebook and a pen.
- Feel free to ask us and your Assistants questions in and out of class, especially during office hours.
- Remember that you do not have to be a math genius to be successful in this course. Regular study habits are sufficient to get a decent grade.
- Attend the classes and recitation hours regularly. Make sure you attend your own (registered) recitation section.
- Studying out of class for this course should become a routine. Key to success in mathematics is practice.
- GeoGebra and Desmos are useful softwares/websites to visualize many of the concepts we discuss.

Below is a tentative breakdown of topics (note: for the exam topics, please refer to the announcements).

Lecture	Date	Topic (Sections from the textbook)
Week 1	Sep 23, 24	8.1 - 8.2 Sequences
Week 2	Sep 30, Oct 01	8.3 Infinite series 8.4 Divergence Test, Integral Test
Week 3	Oct 07, 08	8.4 Divergence Test, Integral Test (cont'd) 8.5 Ratio Test, Root Test, Comparison Test, Limit Comparison Test
Week 4	Oct 14, 15	8.6 Alternating Series Test, Absolute convergence 9.1 Taylor polynomials 9.2 Power series and their properties
Week 5	Oct 21, 22	9.3 Taylor series 9.4 Working with Taylor series
Week 6	Oct 28, 29	NO LECTURE
Week 7	Nov 04, 05	11.1 Vectors in 2D 11.2 Vectors in 3D 11.3 Dot product
Week 8	Nov 11, 12	11.3 Dot product (cont'd) 11.4 Cross product 12.1 Planes, Cylinders, Quadratic surfaces
Week 9	Nov 18, 19	12.1 Planes, Cylinders, Quadratic surfaces (cont'd) 12.2 Graphs and level curves 12.3 Limits and continuity
Week 10	Nov 25, 26	12.4 Partial derivatives 12.5 The chain rule 12.6 Directional derivatives and the gradient
Week 11	Dec 02, 03	12.7 Tangent planes and linear approximation 12.8 Maximum/minimum problems
Week 12	Dec 09, 10	12.9 Lagrange Multipliers 13.1 Double integrals over rectangular regions
Week 13	Dec 16, 17	13.2 Double integrals over general regions
Week 14	Dec 23, 24	13.3 Double integrals in polar coordinates 13.4 Triple integrals
Week 15	Dec 30, 31	Review